

REMARKS

In the Office Action, dated September 7, 2005, the Examiner states that Claims 1-17 are pending and rejected. By the present Amendment, Applicant amends independent Claims 1, 16, and 17, and dependent Claims 5, 6 and 10; cancels Claims 2-4 and 9; and adds new Claims 18-29.

In the Official Action, Claims 1, 2, 4, 5, 7, 8, 11, 12, and 16 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kubo et al. (JP 03-130211). The Applicant has cancelled Claims 1, 3-4 and 9 and incorporated the features into amended independent Claim 1, 16, and 17. This amendment should overcome the above-referenced rejection. According the present amendment, independent Claims 1 and 16 claim a binder resin. Since a fluorine-contained photoreactive compound of the present invention has a specific structure, it has a very low refractive index and is superior in compatibility with other blend components such as binder resin. This compound is thereby suitable for a low refractive index modulating component. By adding resin into a volume hologram recording photosensitive composition, as a refractive index modulating component, superior sensitivity and refractive index modulating effect can be obtained (pg. 52, line 23 – pg. 53, line 10 and pg. 12, line 26 – pg. 13, line 14 of the specification). In contrast, Kubo discloses a fluorine-contained photoreactive compound; however, it aims to obtain a dental material composition that is excellent in low water absorptivity, abrasion resistance and hardness. Further, HDEP used in example 4 of Kubo et al. is used as a diluent. Kubo discloses many fluorine-contained photoreactive compounds having other structures; however, there is no suggestion or teaching about what kind of fluorine-contained photoreactive compound is suitably selected to have a very low refractive index and be superior in compatibility with other blend components such as a binder resin. Therefore, Kubo does not anticipate the presently amended claims.

In the Official Action, Claims 1, 2, 3, 7, 8, and 16 are rejected under 35 U.S.C. § 102(b) as being anticipated by Koshobu et al. (JP 2000-154351). Claims 1-3, 7 and 16 are rejected under 35 U.S.C. § 102(b) as being anticipated by Mishima et al. (U.S. 5,187,770). According the present amendment, independent Claim 1 and 16 claim that each of R¹ and R² in the formula (1) is independently an epoxy or an

oxetanyl group. Additionally, by the present amendment, independent Claims 1 and 16 claim that the photosensitive composition comprises a binder resin. In contrast, neither Koshobu et al. nor Mishima et al. claim these features, and therefore, neither Koshobu et al. nor Mishima et al. anticipate the presently amended claims.

In the Official Action, Claims 1, 2, 4, 5, 7-10, 12 and 16-17 are rejected under 35 U.S.C. § 102(a) as being anticipated by Otaki et al. (JP 2002-323845). Otaki et al. does not anticipate the present application because its prior art date is after the priority date of the present application. The Otaki et al. (JP 2002-323845) prior art date is November 8, 2002; however, the present application claims priority from Japanese Patent Application Serial Nos. JP 2002-204797, with a filing date of July 12, 2002, and JP 2002-304672, with a filing date of October 18, 2002. Certified English translations of the Japanese Patent documents are filed in the **Appendix**.

In the Official Action, Claims 1-3, 7-12 and 14-17 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sugawara et al. (JP 05-273899). According the present amendment, independent Claim 1, 16, and 17 claim that each of R¹ and R² in the formula (1) is independently an epoxy or an oxetanyl group. Sugawara et al. does not disclose this feature, and therefore, it does not anticipate the present invention.

In the Official Action, Claims 1-3, 7 and 16 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kuriyama et al. (JP 07-014436). According the present amendment, independent Claim 1 and 16 claim that each of R¹ and R² in the formula (1) is independently an epoxy or an oxetanyl group. Additionally, by the present amendment, independent Claims 1 and 16 claim a binder resin. Kuriyama et al. does not disclose either of these features, and therefore, it does not anticipate the present invention.

In the Official Action, Claims 1, 2, 4, 5, 7, 8, 11, 12 and 16 are rejected under 35 U.S.C. § 102(a) as being anticipated by Fukushima et al. (JP 2003-089779). Fukushima et al. does not anticipate the present application because its prior art date is after the priority date of the present application. The Fukushima et al. prior art date is March 23, 2003; however, the present application claims priority from Japanese Patent Application Serial Nos. JP 2002-204797, with a filing date of July 12, 2002, and JP 2002-304672, with a filing date of October 18, 2002. Certified English translations of the Japanese Patent documents are filed in the **Appendix**.

In the Official Action, Claims 1, 2, 4-8, 11, 12 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Otaki et al. (JP 2002-323845), Fukushima et al. or Kubo et al. in view of Boutevin et al. (U.S. 5,208,312). As addressed above, neither Otaki et al. (JP 2002-323845) nor Fukushima et al. are proper prior art references. Additionally, as is claimed in the present application, Kubo et al. does not disclose the addition of a binder resin. Boutevin et al. does not disclose the addition of a binder resin. Therefore, Kubo et al. combined with Boutevin is not obvious with respect to the present application because the references in combination do not teach or suggest that which is claimed in the present application.

In the Official Action, Claims 1, 2, 4, 5, 7-12, and 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohkuma et al. (U.S. 5,869,210) in view of Otaki et al. (JP 2002-323845), Fukushima et al., or Kubo et al. As addressed above, neither Otaki et al. (JP 2002-323845) nor Fukushima et al. are proper prior art references. With respect to the references Kubo et al. and Ohkuma et al., the Applicant respectfully disagrees and transverse this rejection. Kubo et al. discloses a dental material composition. Ohkuma et al. and the present invention are related to photosensitive recording medium for volume hologram recording. One skilled in the art would not have any motivation to combine that which is disclosed in Kubo et al. and that disclosed in Ohkuma et al. The two inventions are in entirely different fields and one skilled in the art would not review art relating to dental material compositions. Therefore, the present invention is not obvious to Ohkuma et al. and Kubo et al., and the Applicant respectfully requests that this rejection be withdrawn.

In the Official Action, Claims 1, 2, 4, 5-12 and 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohkuma et al. in view of Otaki et al. (JP 2002-323845), Fukushima et al., or Kubo et al., combined with Boutevin et al. As addressed above, neither Otaki et al. (JP 2002-323845) nor Fukushima et al. are proper prior art references. Furthermore, as addressed in the preceding paragraph the Applicant does not believe that one skilled in the art would have any motivation to combine that which is disclosed in Kubo et al. and that which is disclosed in Ohkuma et al. Therefore, the Applicant respectfully requests that this rejection be withdrawn.

In the Official Action, Claims 1-3, 7-12 and 14-17 are rejected under 35 U.S.C.

§ 103(a) as being unpatentable over Ohkuma et al. in view of Sugawara et al. As amended, the independent Claims 1, 16, and 17 claim that each of R¹ and R² in the formula (1) is independently an epoxy or an oxetanyl group. This feature is not disclosed in either Ohkuma et al. or Sugawara et al., and therefore, the present invention is not obvious in view of the cited references.

In the Official Action, Claims 1, 2, 4, 5, 7-12, and 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Oktaki et al. (U.S. 2003/0087163). Oktaki et al. does not anticipate the present application because its prior art date is after the priority date of the present application. The Oktaki et al. prior art date is May 8, 2003; however, the present application claims priority from Japanese Patent Application Serial Nos. JP 2002-204797, with a filing date of July 12, 2002, and JP 2002-304672, with a filing date of October 18, 2002. Certified English translations of the Japanese Patent documents are filed in the **Appendix**.

In the Official Action, Claims 1-3, 7-12, and 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Maeda et al. (JP 06-019040), in view of Sugawara et al. Also, Claims 1-3 and 7-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Maeda et al. (JP 06-019040), in view of Sugawara et al., further in view of Otaki et al. (JP 2002-236440). As amended, the independent Claims 1, 16, and 17 claim that each of R¹ and R² in the formula (1) is independently an epoxy or an oxetanyl group. This feature is not disclosed in either Maeda et al. or Sugawara et al., and therefore, the present invention is not obvious in view of the cited references. Furthermore, the feature is not disclosed in Otaki et al. (JP 2002-236440), and moreover, this reference does not anticipate the present application because its prior art date is after the priority date of the present application. The Otaki et al. (JP 2002-236440) prior art date is August 23, 2002; however, the present application claims priority from Japanese Patent Application Serial Nos. JP 2002-204797, with a filing date of July 12, 2002, and JP 2002-304672, with a filing date of October 18, 2002. Certified English translations of the Japanese Patent documents are filed in the **Appendix**.

In the Official Action, Claims 1-3, 7-12, and 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Otaki et al. (EP 1231511), in view of Sugawara et al. As amended, the independent Claims 1, 16, and 17 claim that each of R¹ and R² in the formula (1) is independently an epoxy or an oxetanyl group. This

feature is not disclosed in either Otaki et al. (EP 1231511) or Sugawara et al., and therefore, the present invention is not obvious in view of the cited references. Furthermore, the Otaki et al. (EP 1231511) prior art date is August 14, 2002; however, the present application claims priority from Japanese Patent Application Serial Nos. JP 2002-204797, with a filing date of July 12, 2002, and JP 2002-304672, with a filing date of October 18, 2002. Certified English translations of the Japanese Patent documents are filed in the **Appendix**.

In the Official Action, Claims 1-5 and 7-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-33 of copending Application No. 10/072201 in view of Sugawara et al. or Otaki et al. (JP 2002-323845). The Applicant respectfully disagrees and transposes this rejection. As was addressed above, Otaki et al. (JP 2002-323845) is not a proper prior art reference. With respect to Sugawara et al., that reference does not disclose the fluorine contained photoreactive compound of the present invention. The present invention claims a compound represented by formula (1) wherein each R¹ and R² is independently an epoxy group or an oxetanyl group. Neither Sugawara et al. or the copending Application teach or suggest this feature, and therefore, the present invention is not obvious in view of the cited references.

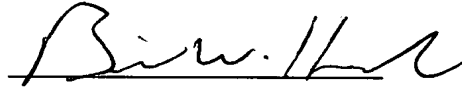
The Commissioner is authorized to charge our Deposit Account No. 12-0400 in the amount of \$1260 to cover the fee for the six independent claims in excess of three and \$250 to cover the fee for the five claims submitted in excess of twenty total claims, or for any fees in excess of the amount submitted.

In light of the foregoing response, all the outstanding rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,

October 5, 2007

Date

A handwritten signature in black ink, appearing to read "Brian W. Hameder", written over a horizontal line.

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